STUART TURNER
ENGINEERED TO EXCEL

stuart

Installation, Operation & Maintenance Instructions

Please leave this instruction booklet with the home owner as it contains important guarantee, maintenance and safety information

Read this manual carefully before commencing installation.

This manual covers the following products:

Diver 35
Pt. No. 46585

Diver 45
Pt. No. 46586

50 Hz

PRODUCT DESCRIPTION
Electric motor driven submersible pump with float switch control.

APPLICATION
The Diver pump range is designed for re-circulation, drainage and transfer of clean fresh water in outdoor or indoor applications.
All models within the range incorporate an adjustable float switch assembly which provides automatic pump control.
These models are suitable for clean water only.

- **This pump set must not be used for any other application without the written consent of Stuart Turner Limited.**
- **Do not connect this pump to the mains water supply.**
- **The use of this product requires experience with and knowledge of the product.**
  Persons with reduced physical, sensory or mental capabilities must not use this product, unless they are under supervision or have been instructed in the use of the product by a person responsible for their safety.
- **Children must not use or play with this product.**

Please read installation details carefully as they are intended to ensure this product provides long, trouble free service. Failure to install the unit in accordance with the installation instructions will lead to invalidation of the warranty.

STORAGE
If this product is not to be installed immediately on receipt, ensure that it is stored in a dry, frost and vibration free location in its original packaging.

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CHECKLIST

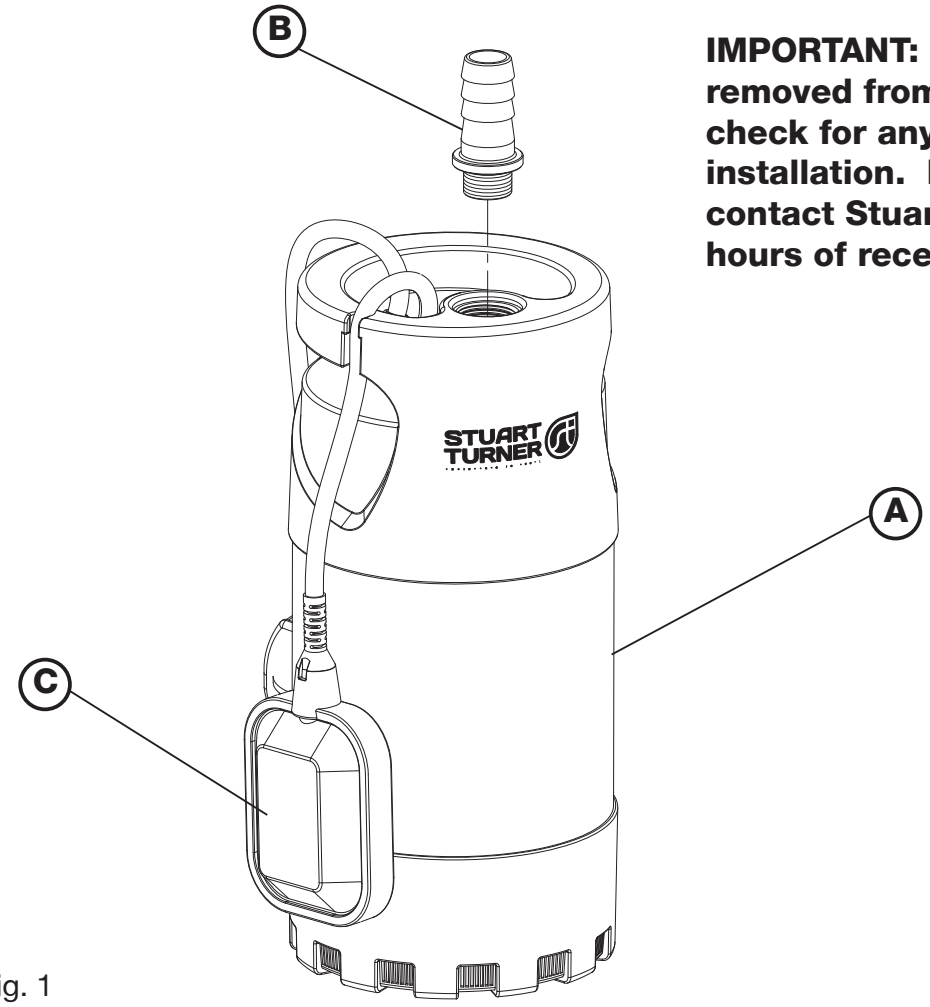

Fig. 1

IMPORTANT: With the pump removed from its packaging check for any damage prior to installation. If any damage is found contact Stuart Turner Ltd within 24 hours of receipt.

Item	Description	Qty	Item	Description	Qty
A	Pump	1	C	Float switch (part of pump)	1
B	25 mm Hose connector	1			

Your product may vary slightly from the picture above.

Cont ...

1 IMPORTANT FACTS: READ BEFORE COMMENCING PUMP INSTALLATION

A. **Water temperature**

The water entering the pump must be controlled as follows:

1.11 The maximum allowable water temperature is 35 °C.

1.12 The minimum allowable water temperature is 4 °C.

B. **Pipework - general**

1.13 All models are supplied with a hose connector (see pump connection section for details) which can be screwed directly into the pump discharge connection..

1.14 The hose connector is suitable for a 25 mm hose size. For best flow use the largest bore pipe possible minimising 90° bends. Small pipe sizes will reduce the pump performance.

C. **Electrical installation regulations**

1.15 The electrical installation must be carried out in accordance with the current national electrical regulations.

1.16 The electrical installation must be installed by a qualified person.

Cont ...

2 LOCATION - GENERAL

2.11 **Access:** For emergencies and maintenance the pump must be easily accessible.

2.12 Do not run against a closed valve for periods longer than 5 minutes. The water in and around the pump must not be allowed to freeze. This will result in pump damage.

2.13 Do not under any circumstances use the supply cord fitted, as a means to carry or lower the pump into position on installation. Attach a rope sling to handle.

2.14 Never run pump whilst sucking air only as the motor will overheat. To prevent this happening always install pump in the vertical position and ensure fully submerged.

2.15 **Pump position:** When siting the pump ensure its base is raised slightly from the bottom of the sump reducing the possibility of blocking the filter with debris or drawing in small stones (see Fig. 2).

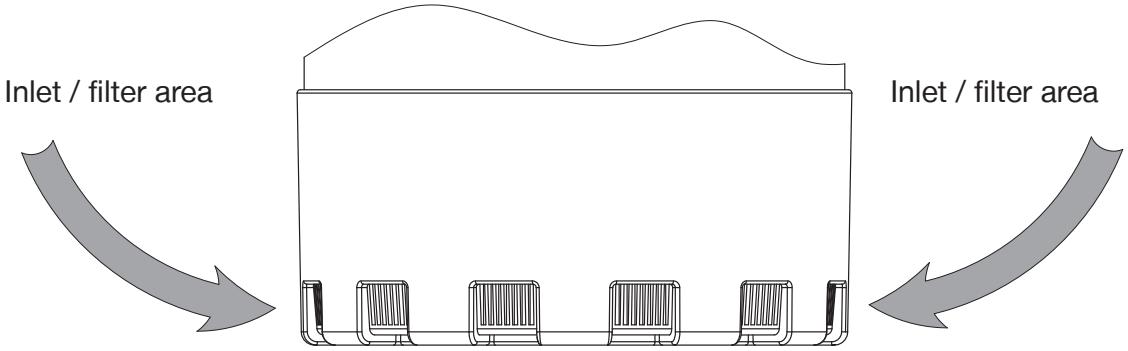

Fig. 2

2.16 If the pump is to be run continuously it must be installed in a vertical position and must be submerged at all times to avoid overheating of the motor.

2.17 If the float switch is in use to empty a tank the pump may be operated partially submerged for short periods (see float switch operation section for further details).

2.18 **Float Switch Operation:**
All Diver models are fitted with a float switch for automatic operation.

2.19 The following guide will help you get the most out of your pump.

2.20 The pump must never run dry, needing a minimum water depth of 300 mm at all times.

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2.21 Adjustment of the float switch is achieved by lengthening or shortening the cable through the moulded cable retention slot, which is located in the pump handle (Figs 3 and 4).
Note: When inserting cable into slot ensure it is fully engaged.

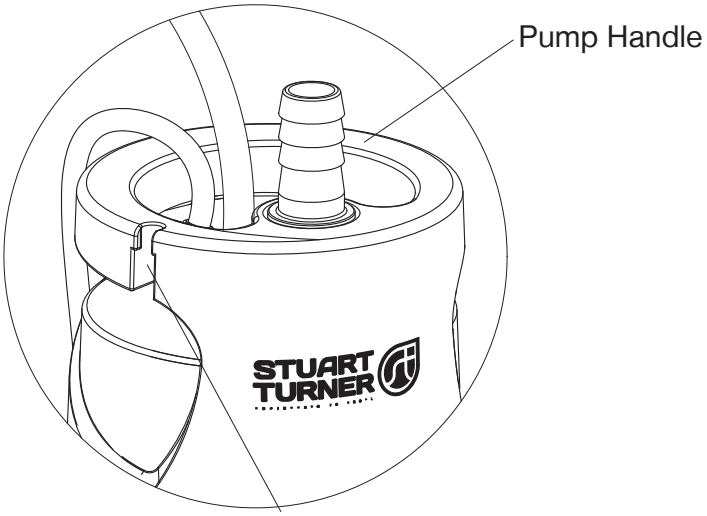

Fig. 3

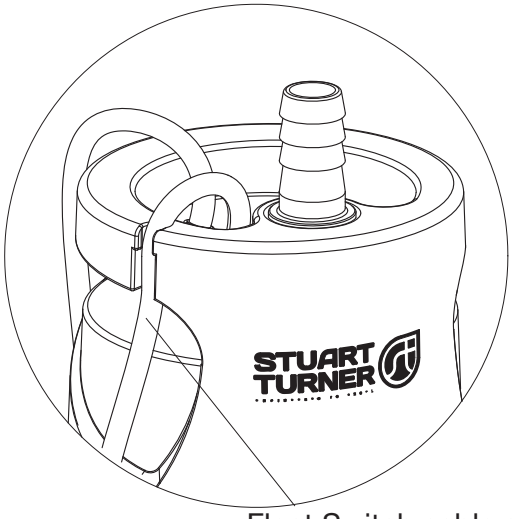

Fig. 4 Float Switch cable shown slotted into position

2.22 If modification of the level setting is required refer to Figures 5 and 6 and the following chart.

2.23 Wherever the pump is installed it must have sufficient dimensions for the float switch to operate freely (Fig. 7), retaining a minimum water depth as previously stated. The pump is continuously rated when fully submerged but should only be run for short periods (10 mins) when the water drops to the minimum level. The number of starts should not exceed 30 per hour.
Note: It is not possible to empty the sump completely, a minimum depth must remain (Figs. 5 & 6).

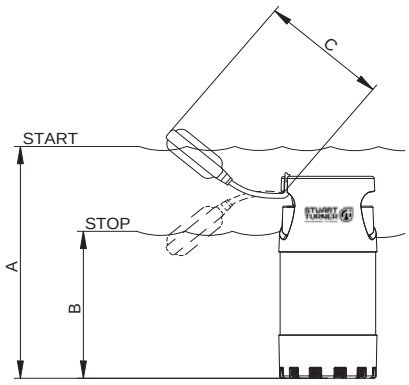

Fig. 5 Min. Float Switch Movement

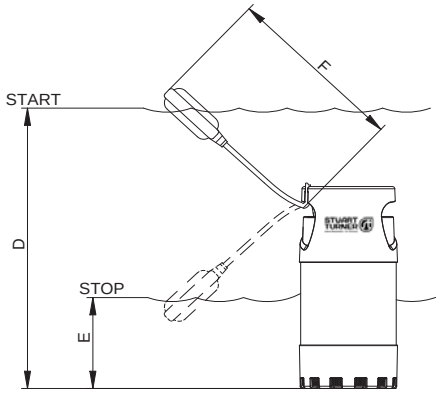

Fig. 6 Max. Float Switch Movement

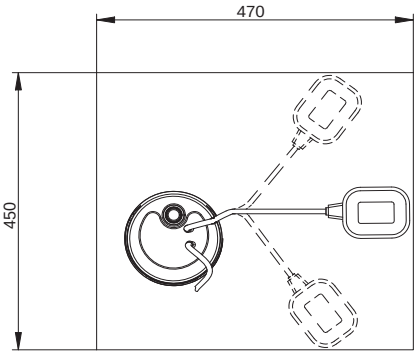

Fig. 7 Min. Size Of Sump

	A	B	C	D	E	F
PUMP TYPE	START (MIN.ADJ)	STOP (MIN.ADJ)	CABLE (MIN.ADJ)	START (MAX.ADJ)	STOP (MAX.ADJ)	CABLE (MAX.ADJ)
All models	410	300	220	460	200	320

Cont ...

3 PUMP CONNECTIONS

3.11 Diver pumps have a 1 “ BSP female connection and are supplied with a 25 mm hose connector.

Pump Type	Pump Outlet	Hose Bore (mm)
All models	G1 F	25

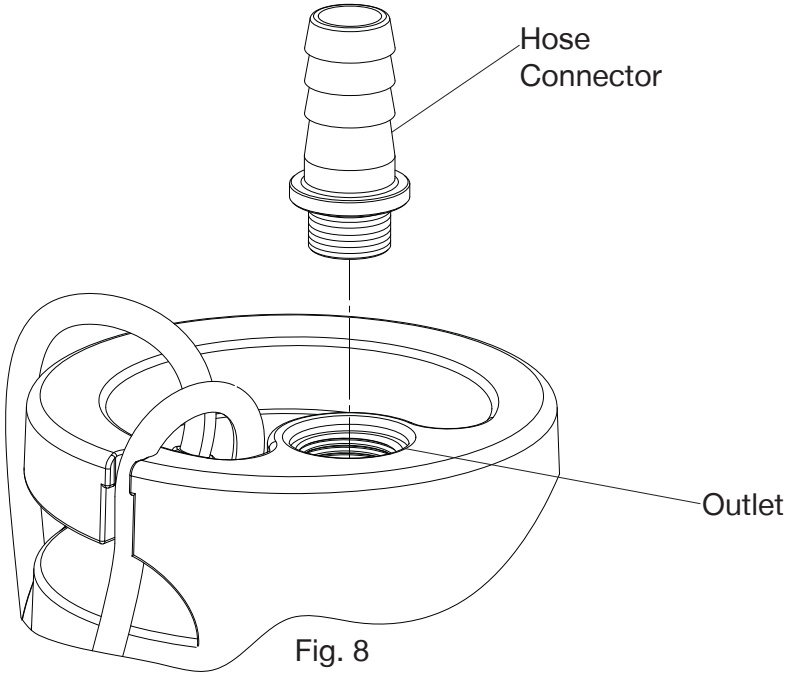

Fig. 8

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4 ELECTRICAL INSTALLATION

4.11 **Regulations:** The electrical installation must be carried out in accordance with the current local regulations by a qualified person.

4.12 **Safety:** In the interests of electrical safety a 30 mA residual current device **(R.C.D. not supplied)** should be installed in the supply circuit. This may be part of a consumer unit or a separate unit.

4.13 Before starting work on the electrical supply ensure power supply is isolated.

4.14 Isolate all appliances in the water from the electrical supply before putting your hands in the water.

4.15 The power supply cord of this pump cannot be replaced. If the cord is damaged, the pump should be disposed of (see Section 8.11).

4.16 If the pump is used to empty a swimming pool, the pump must not be used when people are in the water.

4.17 **Earthing:** This appliance must be earthed via the supply cord.

4.18 **Connections:** The motor is provided with a factory fitted supply cord and plug. This must be connected to the mains supply via a 13 Amp double pole switched, socket outlet in compliance with BS 1363-2.
The socket outlet should be mounted in an easily accessible position and should be labelled if confusion is possible, to allow easy identification of the pump isolating switch.

4.19 **Wiring Of Connection Unit:**
The moulded plug fitted to this appliance is not waterproof - keep dry.
If the plug supplied is not suitable for your socket outlet, it should be cut off and destroyed.
A plug with bared flexible cords is hazardous if engaged in a live socket outlet.
The wires in the mains lead (supply cord) are coloured in accordance with the following code:

Green and Yellow: Earth Blue: Neutral Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your connection unit proceed as follows:
The wire which is coloured green and yellow must be connected to the terminal in the connection unit which is marked with the letter E or by the earth symbol: ⏚ or coloured green or green and yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

4.20 **Fuse:** All models should use 13 Amp fuse.

4.21 **Float switch cord replacement:** The float switch cord cannot be replaced. If the cord is damaged the pump should be disposed of (see Section 8.11).

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4.22 **Supply cord extension (pump):** The pumps are fitted with a supply cord suitable for outdoor and underwater use. The cord specification is as follows:-

Pump Type	Cord Type	Cord Length (m)
Diver	HO7RN-F3 G 1.0 mm^2	15

If an extension cord is necessary a cord of the proper type and rating must be used.
In general for 230 volt pumps on distances up to 40 metres (inclusive of original cord length) the same specification cord as fitted to the pump can be used. For distances above 40 metres a larger cord size may be required due to voltage drop and advice must be obtained based upon installation details.
Any connectors or junction boxes must be specifically suited for outdoor use and installed in accordance with manufacturers instructions.
Any cable routed underground must be protected to local standards.

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5 COMMISSIONING

5.11 The pump chamber must be full of water at all times. Damage will result if pump runs dry.

5.12 The pump must be fully submerged before starting. Take care when submerging the pump to ensure all air is purged from the casing. This is done by slowly submerging the pump and gently agitating whilst doing so. This will enable any trapped air pockets to be released.

5.13 Turn on the electrical supply and water movement should be immediately evident from pump outlet. If it is not, repeat step 5.12.

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6 MAINTENANCE

6.11 The water in and around the pump must not be allowed to freeze. This will result in pump damage.

6.12 Provision should be made for easy access to the pump to allow for regular maintenance.

6.13 The integral inlet filter grille should be checked periodically and cleaned if required. It is important the filters are clean and free from debris which in turn ensures the pump will always run at maximum efficiency. A blocked filter can cause damage to the pump.

6.14 The pump must be cleaned as follows:-

1) Disconnect electrical supply before working on pump.
2) Release system pressure from pipework and remove pump from water (do not use cable to lift pump).
3) Clean integral inlet filter grilles using water pressure from a hose pipe (Fig. 9).
4) Refer to commissioning section for instructions on re-starting pump.

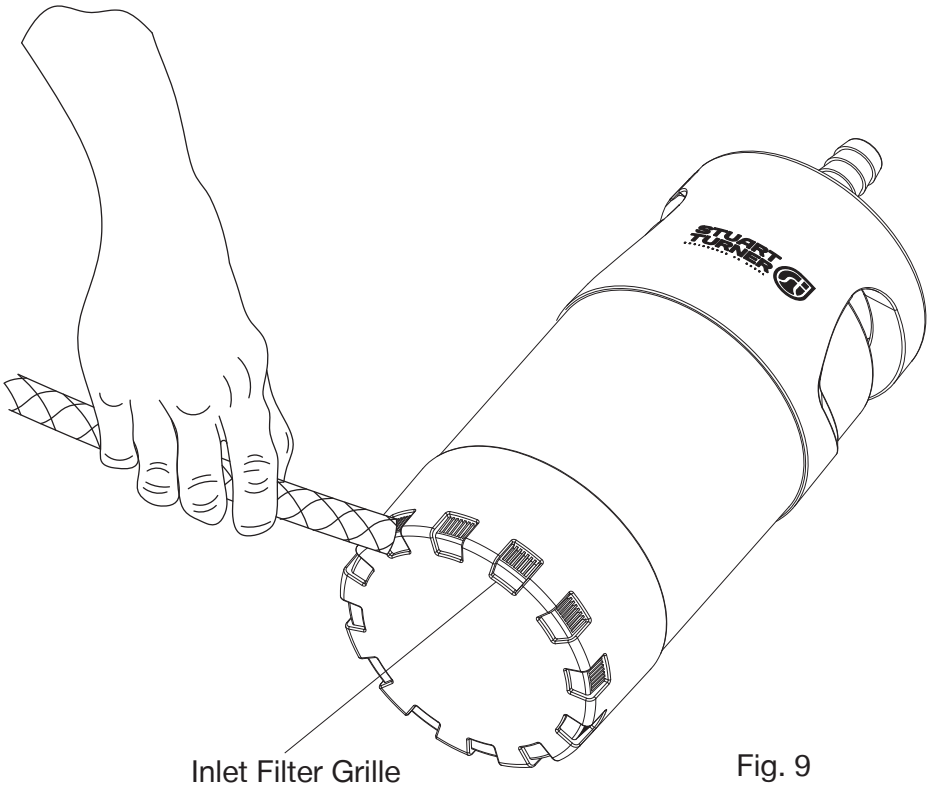

Fig. 9

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7 TECHNICAL SPECIFICATION

Pump Model		**Diver 35 46585**	**Diver 45 46586**
General	Guarantee	1 year	
Features	Pump type	Submersible	
	Mechanical seal	Nitrile / Carbon / Ceramic	
	Automatic and manual mode	✓	✓
	Automatic float switch	✓	✓
Performance	Maximum head (closed valve)	34 metres	42 metres
	Maximum immersion depth	10 metres	
	Minimum immersion depth	300 mm	
	Performance @ 20 l/min	29 metres	35 metres
	Performance @ 60 l/min	15 metres	21 metres
	Maximum flow	88 l/min	94 l/min
	Min / Max water temperature	Min 4 °C / Max 35 °C	
Connections	Pump connections	G 1 female	
	Control module (Boostamatic only)	G 1 male	
	Hose Connector	25 mm male	
Motor	Type	Induction, auto-reset thermal trip	
	Duty rating	Continuous	
Electrical	Power supply / phase / frequency	230 V a.c. / 1 / 50 Hz	
	Current (full load)	3.7 Amps	4.7 Amps
	Power consumption	774 Watts	1012 Watts
	Fuse rating	13 Amps	
	Power cable (pre-wired)	15 metres	
Physical	Enclosure protection	IPX8	
	Width	164 mm	
	Height (excluding hoses)	350 mm	387 mm
	Weight (including fittings)	8.7 Kg	9.2 Kg

Stuart Turner reserve the right to amend the specification in line with its policy of continuous development of its products.

Maximum permissible water temperature 35°C.

7.11 **Noise:** The equivalent continuous A-weighted sound pressure level at a distance of 1 metre from the pump does not exceed 70 dB(A).

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8 TROUBLE SHOOTING GUIDE

Symptoms	Probable Cause	Recommended Action
Pump stops running.	Thermal overload protection has tripped.	Disconnect the power supply to the pump. Allow to cool for 30 mins. Check to ensure the pump is connected to the correct voltage supply. Check to ensure the impeller is not jammed and can rotate freely. Check to ensure water to be pumped does not exceed recommended temperature, ensure pump has not run dry and is fully submerged. Check probable causes and remedy, allow to cool reinstall and connect cable.
Pump will not start.	Pump not connected to the electricity supply. Impeller Jammed. Float switch not working.	Check the cable is connected correctly and power supply is switched on. Check fuse. Clean away debris from the impeller. Check the float switch by hand (do not attempt to dismantle float switch) for further advice contact Stuart Turner.
Pump runs but no water is supplied.	Low water level. Discharge pipe clogged. Suction filter blocked.	Ensure the pump is fully submersed below the water level. Ensure that the pump is not able to suck air in (low water level). Remove pipe and ensure the discharge is clear of any debris. Check inlet pre-filters (if fitted), are free from blockages.

8.11 **Environment Protection:** Your appliance contains valuable materials which can be recovered or recycled.
At the end of the products' useful life, please leave it at an appropriate local civic waste collection point.

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9 THE GUARANTEE - 1 YEAR

Congratulations on purchasing a Stuart Turner pump.

We are confident this pump will provide many years of trouble free service as all our products are manufactured to the very highest standard.

All Stuart Pumps are guaranteed to be free from defects in materials or workmanship for 1 year from the date of purchase.

Within the guarantee period we will repair, free of charge, any defects in the pump resulting from faults in material or workmanship, repairing or exchanging the whole unit as we may reasonably decide.

Not covered by this guarantee: Damage arising from incorrect installation, improper use, unauthorised repair, normal wear and tear and defects which have a negligible effect on the value or operation of the pump.

Reasonable evidence must be supplied that the product has been purchased within the guarantee term prior to the date of claim (such as proof of purchase or the pump serial number).

This guarantee is in addition to your statutory rights as a consumer. If you are in any doubt as to these rights, please contact your local Trading Standards Department.

In the event of a claim please telephone **'PumpAssist'** or return the pump and flexible hoses with the accessories removed e.g pipes etc. If you have any doubt about removing a pump, please consult a professional.

+44 (0) 844 98 000 97

Proof of purchase should accompany the returned unit to avoid delay in investigation and dealing with your claim.

You should obtain appropriate insurance cover for any loss or damage which is not covered by Stuart Turner Ltd in this provision.

Please record here for your records.

TYPE NO.	SERIAL NO.	DATE PURCHASED

NOTES

DECLARATION OF CONFORMITY

2006/95/EC

BS EN 60335-1, BS EN 60335-2-41, EN 50366

2004/108/EC

BS EN 55014-1, BS EN 55014-2, BS EN 55022, BS EN 61000-3-2, BS EN 61000-3-3, BS EN 61000-4-2, BS EN 61000-4-3, BS EN 61000-4-4, BS EN 61000-4-5, BS EN 61000-4-6, BS EN 61000-4-11

2011/65/EU

IT IS HEREBY CERTIFIED THAT THE STUART ELECTRIC MOTOR DRIVEN PUMP COMPLIES WITH THE ESSENTIAL REQUIREMENTS OF THE ABOVE E.E.C. DIRECTIVES.

RESPONSIBLE PERSON
AND MANUFACTURER

STUART TURNER LIMITED
HENLEY-ON-THAMES, OXFORDSHIRE
RG9 2AD ENGLAND.

Signed. . . . . Business Development Director

Stuart Turner are an approved company to BS EN ISO 9001:2008

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